The Impact of the Level of State Tax Code Progressivity on Selected Children's Educational, Health, and Poverty Outcomes: An Exploratory Study

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Statement of the Research Problem

Over the past 25 years American society has witnessed an increasingly rapid devolution of federal programs to state government responsibility, (Linhorst, 2002; Schneider & Lester, 2001; Schneider & Netting, 1999). Devolution has affected numerous areas of interest to social workers, such as housing and other social welfare programs (e.g. Temporary Assistance to Needy Families [TANF] and the Social Services Block Grant [SSBG]).

This realignment of governmental responsibility means that state governments are now charged with not only implementing the former federal programs, but paying for them due to reductions in federal funding. Many states are ill-prepared to finance the federal devolution because state tax codes were not designed to raise the massive revenues needed in place of federal funding. Instead, most state tax codes were designed to pay for only state and local government needs (most often public education) and to supplement or match federal funding for programs such as Medicaid. Whether states have the capacity to fund relegated public services, and how well they do so, may be affected by the adequacy of their tax codes. Further, most state tax codes are regressive, placing a higher tax burden (total tax paid as a proportion of total income) on lower income families compared to higher income families because their state taxes consume a larger proportion of their disposable income (ITEP, 2005). Disposable income is the amount of income available to consumers after taxes are deducted from earnings (Ackley, 1978). Thus, lower income families may experience a greater negative impact from a regressive and inadequate state tax code for two reasons. Firstly, lower income families have less disposable income than is possible under an overall progressive state tax code, and, secondly, the state may lack the revenue to provide needed public and social

services. Taken together, these challenges may negatively affect the well being of state residents.

Some social workers have addressed the impact of devolution on social services and social work policy practice (Schneider & Lester, 2001; Schneider & Netting, 1999). Other social workers have written on the need for the profession to better understand state level policy making (Hoefer, 2005; Jansson, 2008**,** Roberts-DeGennaro, 1986). Understanding state tax policy is an important part of understanding state policymaking. For example, as noted above, state tax policy decisions involve issues of adequacy and fairness, and, unfortunately, the policy instrument most often selected to increase adequacy—the state sales tax—is also the policy instrument that most increases regressivity.

While a state's fiscal capacity is important for all state residents, children were selected as the population of interest for this study for several reasons. Firstly, social work historically has had a special concern for the welfare of children (Axinn & Stern, 2008; Karger & Stoesz, 2002; Petr, 1998). Children are of great concern to the social work profession today because they continue to be at risk for negative life outcomes (Casey Foundation, 2009; Petit, 2006; Petit, 2008). Secondly, the child outcome measures selected for this study (education, health and poverty) are policy areas that, taken together, account for the largest share of state governments' general fund revenue that is invested in children. Finally, pragmatically, there is a greater amount of data available on children's well-being compared to other vulnerable groups, such as the elderly. Data collection on children often is a result of federal laws or other mandates that require outcome measurement by individual state governments or the federal government. For this study, the selected social indicators comprise the measure for a child's well-being. A child's well-being is higher when there is greater educational proficiency, better health outcomes, and lower poverty rates.

Research Background and Hypotheses

The scholarly literature informing the study identified concerns that state tax policy is inadequate for meeting current state needs and will be further stressed in future years. This inadequacy was tied to the failure to modernize state tax codes to reflect the modern economy, the lack of tax incidence studies allowing legislators and citizens to understand who is paying taxes and who is not, and the increasing financial pressures on states from federal devolution of policies and programs.

This study was a secondary data analysis based on archival data, and addressed a segment of state tax policy that has not been examined. It posed one research question: *"Do states with more progressive tax codes have better educational, health and poverty outcomes for children than states with more regressive tax codes?*" and examined these

indicators of children's well-being through one major hypothesis: *Controlling for state characteristics, the greater the level of the state tax code progressivity the better the educational, health and poverty outcomes achieved by children residing in those states.* The study utilized an economics theoretical framework, namely John Keynes' *General Theory of Employment, Interest and Money* (Keynes, 1964). The *General Theory* posits that individual and government behavior can work in tandem to encourage economic growth; economic growth tends to improve outcomes for children (Karger & Stoesz, 2008).

The study's independent variable, a state's level of tax code progressivity is conceptualized as the amount of fairness in its state tax code in comparison to the other states. State tax code progressivity, is measured by the state's progressivity ranking. The state progressivity ranking was calculated by comparing the amount of taxes paid by a state's lowest income residents and middle income residents to the state's wealthiest residents as calculated by the Institute for Taxation and Economic Policy (ITEP), a Washington, DC-based research organization. A state tax code was considered regressive if it requires poor families (the bottom 20% of the income scale) to pay *at least* two to four times as great a share of their earnings in taxes in comparison to the wealthy (the top 1% of income earners) and requires middle-income families (the middle 60% of the income scale) to pay *at least* one-and-a-half to three times as high a share of their income as the wealthiest families.

The dependent variable, *educational outcomes for children,* is conceptualized as the level of success for children attending public school in both the passing of standardized achievement tests in elementary school and the percent of teens who did not complete high school. The variable measures the percent of students who score at or above proficiency on the National Assessment of Educational Progress standardized tests in math and reading in both fourth and eighth grades. Using these results, the percentages were indexed by computing the percentage of students who score at or above proficiency in both math and reading in fourth grade, and the percentage of students who score at or above proficiency in both math and reading in eighth grade resulting in a new variable, termed *Academic Proficiency* for each of the two grades. Test scores from fourth and eighth grade are utilized because federal law requires states that receive federal Title I funding (funding based on the number of students who receive free or reduced lunch) to participate. The variable also includes the percent of teens who did not complete high school. Teens who did not complete high school is measured by the US Census Bureau as the percent of teenagers between the ages of 16 and 19 who are not enrolled in high school and are not high school graduates**.**

The dependent variable, health outcomes for children, is conceptualized as the level of overall physical health for children under age 18 in each of the 50 states. Data

for this variable will be measured utilizing several outcome indicators. The five selected health outcomes for children are:

- the percent of very low birth weight babies; very low birth weight babies are defined as live births weighing less than 3.4 pounds;
- the percent of low birth weight babies; low birth weight babies are defined as live births weighing less than 5.5 pounds;
- infant mortality rate: infant mortality is defined as deaths occurring to infants under one year of age per 1,000 live births;
- child mortality rate; the child mortality rate is defined as deaths to children between ages one and 14 from all causes per 100,000 children in this age range;
- the percent of children under 17 without health insurance; defined as children under age 18 who were not covered by health insurance at any point during the year.

The variable, poverty outcomes for children, is conceptualized as the number of children in each state who are living in poverty. Three measures comprise the poverty variable in this study: children in poverty, children in extreme poverty, and children under age five in poverty. The variable, children in poverty, is defined by the Census Bureau as the share of children under age 18 who live in families with incomes below the federal poverty level. Children in extreme poverty is defined by the Census Bureau as the share of children under age 18 who live in families with income less than 50 percent of the federal poverty level. Children under age five is defined by the Census Bureau as the share of children under age five who live in families with incomes below the federal poverty level.

Methodology

A data set with the state as the unit of analysis was created for the study through the combination of several publicly available data sources. Data on the level of state tax code progressivity is from ITEP. Data for the three dependent variables were obtained from The Annie E. Casey Foundation KIDSCOUNT project. State demographic data were obtained from the US Census Bureau. Ordinary least squares regression was conducted to test the main and interaction effects of the control variables (total state population, percent of state minority population, median household income) and the independent variable (level of state tax code progressivity) on the dependent variables. Given the study's hypothesis, it was expected that the causal relationships may be uncovered in the interactions of the control variables and the independent variable. In order to examine the differences in means for the interaction of the level of state tax code progressivity and state population size and state tax code progressivity and median

household income, the interacting variables were divided into two categories. A significance level of $p \leq .05$ was used.

Results

As expected, there were no significant bivariate correlations with the independent variable. The study found some support for the hypothesis in the multivariate analyses for some education and some health outcomes, while no support was found in the multivariate analysis for the poverty outcomes.

A significant interaction was found on fourth grade academic proficiency by level of state tax code progressivity and state population size (Table 1). The differences in means are negligible for less populous states (Table 2); as such, the level of state tax code progressivity does not predict fourth grade academic proficiency. However, in more populous states, the level of state tax code progressivity does predict fourth grade academic proficiency. More populous states with more progressive tax codes have a higher percentage of fourth grade students who are academically proficient than do more populous states with more regressive tax codes. In fact, there is a about a nine point differences in means in academic proficiency between more populous states with progressive tax codes compared to more populous states with regressive tax codes.

Similar support for the multivariate hypothesis was found for eighth grade academic proficiency by the level of state tax code progressivity and state population size (Table 3). The level of state tax code progressivity has an effect on eighth grade academic proficiency in all states, although the differences in means are greater in more populous states (Table 4). Overall, the percent of students who are academically proficient in eighth grade is higher in states with more progressive tax codes than it is in states with more regressive tax codes. In less populous states with more progressive state tax codes, the differences in means in eighth grade proficiency are higher by slightly more than one percent compared to less populous states with more regressive state tax codes. However, in more populous states with more progressive tax codes, the differences in means are nine percent higher than in more populous states with more regressive tax codes.

The hypothesis also was partially supported for two health outcome—a state's child mortality rate and a state's infant mortality rate. In Step 3 of the regression for child mortality (Table 5), a state's median household income remained significant. In addition, the level of state tax code progressivity was found to be a significant predictor of the state child mortality rate. Hence, as a state tax code structure becomes more regressive, the child mortality rate increases. A significant interaction on a state's child mortality rate also was found between the level of state tax code progressivity and a state's median household income. Overall mean differences are relatively small (Table

6). While all states with progressive state tax codes have lower rates of child mortality rates, in states with lower median household incomes, the states with a more progressive tax code have a child mortality rate that is 2.5% lower than those with a more regressive state tax code structure. In states with a higher median household income, the difference is only .6 percent.

Although the differences in means are relatively small, because the measure is the death of a child, minimal differences are still meaningful and have substantive significance. Further, even in states with higher median household incomes, because the child mortality rate is increasing as a state tax code moves from a more progressive state tax code structure to a more regressive state tax code structure indicates that the level of state tax code progressivity should not be dismissed.

Finally, the regression for infant mortality found that the level of state tax code progressivity is a predictor of a state's infant mortality rate, when state population, percent of state population that is minority and median household income are controlled (Table 7). Therefore, as a state tax code becomes more regressive, the state's rate of infant mortality increases.

Utility for Social Work Practice

The findings have implications for children and states, as well as for social work education, practice and research.

Implications for Children and State Policy

The implications of finding two predictive relationships involving the level of state tax progressivity on education outcomes may be particularly important because state generated revenue is a primary funding source for public K-12 education. The findings may hold growing importance with the increasing reliance on state funds for public education. Because states are most likely to raise this revenue through their state tax codes the crafting of a progressive state tax structure can assist states in fostering optimal outcomes for children's education. Further, because education success is related to better health outcomes and lower percentages of poverty, the findings are particularly encouraging as a comprehensive opportunity for improving child well-being.

The significant findings on a state's child mortality rate are intriguing, especially because it may blend well with the study's theoretical framework. While individual poverty long has been associated with poorer health status, the finding indicates that state tax policy may be exacerbating a family's ability to respond to their child's health needs to the point that some children are at higher risk for death. A regressive state tax code negatively impacts a family's level of disposable income and leaves them with less money to spend on meeting their basic needs, including health care. While a state with a

lower median income may have a lower financial capacity to provide medical care to poor children, the regressive nature of their tax code may also be preventing the parents from paying for much needed health care from their income. Overall, the findings of this study add urgency to the calls for state governors, legislators, and citizens to better understand the structure of their state tax codes because of the impact it can have on children's outcomes.

Implications for Social Work Education, Practice and Research

Two major social work professional organizations, the National Association of Social Workers and the Council on Social Work Education, have expressed support for economic and tax policy knowledge, and tax fairness through policy statements and accreditation standards, respectively. However, the social work profession is largely absent from significant discussions on tax policy. This absence can be rectified with inclusion of tax policy content within the social work curriculum. Perhaps one of the strongest arguments for including tax policy content is that progressive taxation complements other social work policy goals, in this case, better outcomes for children.

The study's demonstration that tax progressivity affects child well-being highlights that tax policy is an important domain of social work policy practice. The findings should encourage social work policy practitioners to expand the domain of social work policy practice to include tax policy. Direct service practitioners also may now advocate for state tax policies that increase progressivity as a method to increase the disposable income of low income families.

Although, children were the selected population for this study because of their interest to social work there is no reason the methodology could not be applied to other populations. The findings may indicate the beginning of a social policy analysis model.

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Table 1. Multiple Regression Analysis of State Demographics and Level of State Tax Code Progressivity on State Fourth Grade Academic Proficiency

Variables	Step1		Step2		Step3	
	B	Beta	B	Beta	B	Beta
Population	3.63	.23*	3.63	.23*	-2.22	-.14
Median Income	.00	.60**	.00	.60**	.00	.49*
Percent Minority	-53.5	-.73**	-53.4	-.72**	-37.7	-.51*
ITEP			-.01	-.01	-.48	-.66
ITEP*Population					2.72	.56*
ITEP*Income					9.11	.55
ITEP*Minority					-.52	-.29
Constant	20.2		20.4		29.3	
R^2	.66		.66		.72	
F	29.51 *df* 3,46**		21.66 *df* 4,45**		15.57 *df* 7,42**	

**p<.001
* p<.05

Table 2. Mean Values of State Fourth Grade Academic Proficiency by Population Size and Level of State Tax Code Progressivity

		Population	
		Small	Large
ITEP	Progressive	54.4	61.2
	Regressive	55.1	51.8

Table 3. Multiple Regression Analysis of State Demographics and Level of State Tax Code Progressivity on State Eighth Grade Academic Proficiency

Variables	Step1		Step2		Step3	
	B	Beta	B	Beta	B	beta
Population	3.23	.20	3.28	.20	-2.34	-.15
Median Income	.00	.58**	.00	.57**	.00	.63*
Percent Minority	-53.7	-.73**	-52.5	-.72**	-40.0	-.55*
ITEP			-.05	-.07	-.01	-.02
ITEP*Population					2.53	.52*
ITEP*Income					-2.85	-.17
ITEP*Minority					-.44	-.25
Constant	13.9		15.4		12.2	
R^2	.64		.65		.70	
F	27.67 *df* 3,46**		20.77 *df* 4,45**		14.18 *df* 7,42**	

**p<.001
* p<.05

Table 4. Mean Values of State Eighth Grade Academic Performance by Population Size and Level of State Tax Code Progressivity

		Population	
		Small	Large
ITEP	Progressive	46.5	52.2
	Regressive	45.4	43.2

Table 5. Multiple Regression Analysis of State Demographics and Level of State Tax Code Progressivity on State Child Mortality Rates

Variables	Step1		Step2		Step3	
	B	Beta	B	Beta	B	beta
Population	-2.4	-.31**	-2.5	-.31**	-2.0	-.25
Median Income	.00	-.82**	.00	-.82**	.00	-.38*
Percent Minority	13.0	.36**	12.9	.36**	10.5	.29
ITEP			.01	.01	.72	.20*
ITEP*Population					-3.4	-.14
ITEP*Income					-1.6	-.20*
ITEP*Minority					.02	.02
Constant	50.7		50.6		34.4	
R^2	.75		.75		.80	
F	44.83 *df* 3,46**		32.92 *df* 4,45**		23.56 *df* 7,42**	

**p<.001
* p<.05

Table 6. Mean Values of State Child Mortality Rate by Median Household Income and Level of State Tax Code Progressivity

		Income	
		Lower	Higher
ITEP	Progressive	23.3	18.0
	Regressive	25.8	18.6

Table 7. Multiple Regression Analysis of State Demographics and Level of State Tax Code Progressivity on State Infant Mortality Rates

Variables	Step1		Step2		Step3	
	B	Beta	B	Beta	B	beta
Population	-3.2	-.15	-3.3	-.15	-9.8	-.46
Median Income	.00	-.59**	.00	-.59**	-3.9	-.17
Percent Minority	3.1	.32*	3.1	.31*	6.5	.66
ITEP			.00	.02	.21	.21*
ITEP*Population					2.4	.37
ITEP*Income					-4.4	-.20
ITEP*Minority					-.15	-.60
Constant	12.5		12.4		7.79	
R^2	.38		.38		.47	
F	9.36 *df* 3,46**		6.87 *df* 4,45**		5.23 *df* 7,42**	

**p<.001
* p≤.05